

REMARKS

Applicant has amended claim 1 to clarify novel and nonobvious features of the claimed method for producing deproteinized natural rubber latex. Applicant also has added new claims 6 and 7 to round out the coverage to which the Applicant is entitled. The claim language of amended claim 1 and new claims 6 and 7 is supported by the as-filed specification, *e.g.*, page 9, lines 6-11. No new matter has been added.

Applicant has amended claim 1 to remove the cited allegedly informal term, thereby rendering moot the § 112, second paragraph rejection.

Applicant respectfully traverses the rejection of claims 1-4 under 35 U.S.C. § 103(a) over Kawahara et al. (JP 2004-099696) ("Kawahara") in view of S. Kawahara et al. (Polym. Adv. Technol., 2004, Vol. 15, pp. 181-184) ("S. Kawahara"), and the § 103(a) rejection of claims 1-5 over Saito et al. (*Purification of Natural Rubber with Urea*, Proc. 16th. Elastomer Forum of Soc. Rubber Ind., 2003, pp. 1-3) ("Saito") in view of Trautman (U.S. Patent No. 5,777,004) ("Trautman"), and further in view of S. Kawahara.

To establish a *prima facie* case of obviousness, the prior art reference (or references when combined) must teach or suggest all of the claim limitations. M.P.E.P. § 2143, 8th Ed., Rev 7 (July 2008). Further, "[t]he key to supporting any rejection under 35 U.S.C. § 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious." M.P.E.P. § 2142.

Amended Claim 1 recites, among other things, transporting a mixture through the fluid channel while agitating and mixing to denature proteins in raw natural rubber latex at a temperature equal to or higher than 0 °C and lower than 30 °C for a period of 5 to 10 minutes.

None of the cited references discloses or teaches at least agitating and mixing to denature proteins in raw natural rubber latex at a temperature equal to or higher than 0 °C and lower than 30 °C for a period of 5 to 10 minutes. S. Kawahara discloses “removal of proteins from natural rubber with urea”(Title), but does not disclose nor suggest the claimed temperature recited in claim 1, nor the recited time range of 5 to 10 minutes. S. Kawahara, in contrast, discloses at page 182, col. 2, lines 5-8, 17-20, and 31-33; and at page 184, lines 9-10 that the temperature necessary for denaturing proteins with urea is 30 °C. Neither Kawahara, Saito, nor Trautman cures the deficiency of S. Kawahara. Kawahara discloses at paragraph [0013] a preferred temperature of 30 °C - 60 °C, and does not disclose nor suggest any temperature below 30 °C, nor the claimed time range of 5 to 10 minutes. Moreover, Kawahara and Saito fail to disclose or suggest agitating and mixing a mixture. Trautman fails to disclose or suggest any range of a temperature for agitating and mixing.

Moreover, all of the examples disclosed in the present specification disclose denaturing proteins at a temperature lower than 30 °C, *e.g.*, 20 °C. See as-filed specification, page 12, line 18; page 13, lines 1, 12, and 23. It would not have been obvious to one of ordinary skill in the art to modify either Kawahara or Saito in view of Trautman by applying the teaching from S. Kawahara to arrive at the claimed method for producing deproteinized natural rubber latex including agitating and mixing to denature proteins at a temperature equal to or higher than 0 °C and lower than 30 °C for a period of 5 to 10 minutes. See M.P.E.P. § 2143.

In response to the amendments in the Reply to Office Action dated December 30, 2008, the Examiner relied on S. Kawahara to teach that “denaturing proteins in

rubber with urea could be achieved in a time period of 10 minutes (pg. 182),” and further asserted that “the criticality of a shorter processing time is not recognized by the original specification . . .” Office Action, page 5. The latter assertion regarding the present specification is incorrect. Five minutes are equal to 300 seconds, and ten minutes are equal to 600 seconds. All of the examples disclosed in the as-filed specification disclose a time period for agitating and mixing to denature proteins to be between 5 minutes and 10 minutes, *e.g.*, 579 seconds (page 12, line 18) and 578 seconds (page 13, lines 1, 12, and 23), thereby recognizing and supporting the feature of claim 1, *i.e.*, “denatur[ing] proteins . . . a period of 5 to 10 minutes.” Furthermore, the claim recites a temperature equal to or higher than 0 °C and lower than 30 °C for a period of 5 to 10 minutes. A disclosure or suggestion in a prior art reference of a time falling within the recited time frame, without a disclosure or suggestion of the claimed temperature, is inadequate to suggest the claim feature.

For at least the foregoing reasons, the cited references, alone or in combination, fail to teach or suggest all of the claim limitations. Therefore, a *prima facie* case of obviousness has not been established with respect to amended claim 1. See M.P.E.P. § 2143.

In view of the above amendments and remarks, independent claim 1 is allowable over Kawahara in view of S. Kawahara; and over Saito in view of Trautman, and further in view of S. Kawahara. Claims 2-5 depend from amended claim 1, and incorporate all of the elements of claim 1. Claims 2-5 therefore are allowable over the cited references at least due to their dependence from claim 1.

Applicant has added new claims 6 and 7 to round out the coverage to which it is entitled. New claims 6 and 7 are allowable for at least reasons similar to those given for amended claim 1. The denaturing time range recited in claim 6 is outside the time range disclosed in S. Kawahara and the other references. The denaturing time range and temperature range recited in claim 7 are outside the ranges disclosed in S. Kawahara and the other references.


Applicant respectfully requests reconsideration of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to Deposit Account No. 06-0916.

Respectfully submitted,

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